STATE OF TENNESSEE
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
Division of Solid Waste Management
Fifth Floor, L & C Tower
401 Church Street
Nashville, Tennessee 37243 - 1535

September 30, 2004

Mr. Brooks S. Lunger, Manager
Environmental & Quality Assurance
Olin Corporation
P.O. Box 248
1186 Lower River Road
Charleston, TN 37310

RE: Response to Comments
Facility: Olin Corporation
Location: Charleston, Tennessee
Unit: Landfill Disposal
Installation Identification Number: TND 00 333 7292
Permit Number: TNHW-120

Dear Mr. Lunger:

Attached is a copy of the Response to Comments for the hazardous waste landfill disposal permit, TNHW-120, issued to Olin Corporation in Charleston, Tennessee on September 30, 2004.

If you have any questions, please contact Ms. Angela Ivory of my staff at (615) 532-9267.

Sincerely,

Mike Apple
Director

cc: Ms. Angela Ivory, Treatment, Storage and Disposal Section
Ms. Jamie Burroughs, Manager, Treatment, Storage and Disposal Section
Mr. Bill Krispin, Manager, Permitting Sections
Mr. Charlie Burroughs, Manager, Corrective Action Section
Mr. Leo Romanowski, RCRA Branch, EPA, Region 4
Mr. Guy Moose, Chattanooga Environmental Assistance Center

RESPONSE TO COMMENTS
Olin Corporation
Charleston, Tennessee

This document has been prepared in accordance with Tennessee Rule 1200-1-11-.07(7)(j). It has resulted from the Tennessee Division of Solid Waste Management's issuance of a draft permit to Olin Corporation located at 1186 Lower River Road, Charleston, Tennessee 37310, Installation Identification Number TND 00 333 7292. The permit conditions allow the facility to dispose hazardous waste generated on-site in a landfill and require the facility to conduct continued groundwater monitoring, maintenance, and security of the landfill disposal unit. The corrective action conditions for the solid waste management units and areas of concern are included in the facility's post-closure permit (TNHW-112).

Part A of this document describes the efforts made by the Tennessee Division of Solid Waste Management (DSWM) to obtain public input. Part B summarizes and responds to all significant comments received.

A. Public Involvement Opportunities

Olin Corporation issued a public notice in the January 21, 2002, edition of the Cleveland Daily Banner stating that a pre-application public meeting would be conducted at the facility located at 1186 Lower River Road in Charleston, Tennessee on February 21, 2002, concerning the renewal application for a hazardous waste landfill disposal permit. No members of the community attended the public meeting.

DSWM issued a public notice of the issuance of the draft permit in the August 9, 2004, edition of the Cleveland Daily Banner. Several 30-second announcements of the action, referencing the notice published in the newspaper, were also provided over two local radio stations (WCLE-AM and WCLE-FM, Cleveland, Tennessee). The public notice advised the public that copies of the draft permit and associated materials were available for review at DSWM's Chattanooga Environmental Assistance Center (EAC) and at the Cleveland Public Library in Cleveland, Tennessee. The notice also established a 45-day public comment period (ending September 23, 2004) and described how interested persons could comment in writing on the proposed action and request a public hearing. No members of the general public requested a public hearing.

B. Public Comment/Response Summary

There were no written comments received from the public during the 45-day comment period. However, a few comments were received from Olin Corporation and are addressed below.

Comments Received from Olin Corporation

1. **Comment:** In subparagraph I.D.11(e), Olin needs clarification of the definition of "compliance schedules". A statement detailing the applicability of the compliance schedules has been proposed to be added as follows: "Recordkeeping and reporting requirements are summarized in subsection II.K of this permit."

Response: This change will not be made. At this time, a compliance schedule has not been included in the permit, because the permittee has sufficiently met the requirements for obtaining a hazardous waste landfill disposal permit. Currently, there are no outstanding documents, engineering drawings, progress reports, or other information required under this permit that have not been submitted by the permittee. However, if during the life of the permit, the permittee does not comply with the conditions of the permit or applicable Tennessee Hazardous Waste Management Regulations, the Director of the Division of Solid Waste Management, at his discretion, may modify the permit to include a compliance schedule, requiring specific information to be submitted or actions to be taken by the permittee in order to return the permittee to compliance with permit conditions or applicable Tennessee Hazardous Waste Management Regulations. If this occurs, the Director will include in the compliance schedule certain dates by which the permittee must meet the requirements of the schedule of compliance. Failure of the permittee to meet the requirements of the schedule of compliance may result in termination or revocation of the permit. Please also refer to Tennessee Rule 1200-1-11-.07(8)(d), which addresses schedules of compliance.

2. **Comment:** Olin requests clarification where "permittee" or "Commissioner" has been substituted for the pronoun "he" in subparagraphs II.L.3(a) and (b), parts II.L.5(a)(ii) and (b)(ii), Items II.L.5(a)(i)(II)(B) and (b)(i)(II)(B), and parts II.M.1(b)(i) and (ii).

Response: The pronoun "he" has been replaced with "the permittee" in subparagraph II.L.3(a) as follows: "The permittee shall notify the Commissioner in writing at least 60 days prior to the date on which the permittee expects to begin final closure of the facility."

The pronoun "he" has also been replaced with "the permittee" in subparagraph II.L.3(b) as follows: "The date when the permittee 'expects to begin closure' must be no later than 30 days after the date on which any hazardous waste management unit receives the known final volume of hazardous waste . . . . If the permittee can demonstrate to the Commissioner that the hazardous waste management unit or facility has the capacity to receive additional hazardous wastes and the permittee has taken all steps to prevent threats to human health and the environment . . . ."

The pronoun "he" has also been replaced with "the permittee" in Item II.L.5(a)(i)(II)(B) as follows: "There is a reasonable likelihood that the permittee or another person will recommence operation of the hazardous waste management unit or the facility within one year . . . ."

The pronoun "he" has also been replaced with "the permittee" in part II.L.5(a)(ii) as follows: "The permittee has taken and will continue to take all steps to prevent threats to

human health and the environment, including compliance with all applicable permit requirements."

The pronoun "he" has also been replaced with "the permittee" in Item II.L.5(b)(i)(II)(B) as follows: "There is a reasonable likelihood that the permittee or another person will recommence operation of the hazardous waste management unit or the facility within one year . . . ."

The pronoun "he" has also been replaced with "the permittee" in part II.L.5(b)(ii) as follows: "The permittee has taken and will continue to take all steps to prevent threats to human health and the environment from the unclosed but not operating hazardous waste management unit or facility, including compliance with all applicable permit requirements."

The pronoun "he" has also been replaced with "the Commissioner" in part II.M.1(b)(i) as follows: "Shorten the post-closure care period applicable to the hazardous waste management unit or facility, if all disposal units have been closed, if the Commissioner finds that the reduced period is sufficient to protect human health and the environment . . . ."

The pronoun "he" has also been replaced with "the Commissioner" in part II.M.1(b)(ii) as follows: "Extend the post-closure care period applicable to the hazardous waste management unit or facility, if the Commissioner finds that the extended period is necessary to protect human health and the environment . . . ."

3. **Comment:** Subsections II.Q, II.R, and II.S are not applicable to Olin. Olin requests that these subsections be modified to include "Prior to installing . . ." language that will show that these subsections are not applicable to our landfill/waste accumulation under present circumstances.

Response: No change is necessary for subsection II.S, "Organic Air Emission Standards." The requested phrase, "Prior to installing," was previously incorporated into this requirement for the draft permit. However, similar language to the above request has been added to paragraph II.Q.1 and subsection II.R as follows:

Q. ***AIR EMISSION STANDARDS FOR PROCESS VENTS:***

1. Prior to installing any process vents associated with distillation, fractionation, thin-film evaporation, solvent extraction, or air or steam stripping operations that manage hazardous wastes with organic concentrations of at least 10 ppmw, the permittee shall comply with the requirements of Tennessee Rule 1200-1-11-.06(30), if these operations are conducted in hazardous waste management units subject to this permit and in any on-site hazardous waste recycling unit.

R. ***AIR EMISSION STANDARDS FOR EQUIPMENT LEAKS:*** *Prior to installing any equipment that contains or contacts hazardous waste with organic concentrations of at least 10 percent by weight, the permittee shall comply with the requirements of Tennessee Rule 1200-1-11-.06(31), if this equipment is managed in units that are subject to this permit or in any on-site hazardous waste recycling unit.*

4. **Comment:** Delete the phrase "dimensions of 300 feet long by 220 feet wide and with" from subsection III.A.

Response: The second sentence in subsection III.A has been changed as follows: "The permittee may dispose hazardous wastes in the monofill landfill which has a maximum volume at closure not to exceed a total of 35 acre-feet."

5. **Comment:** Paragraph III.B.6 should be revised to add the phrase "When the landfill dome is not in use."

Response: This change will not be made. As stated above, the requested language would give the facility the option of not using the air-supported structure. Attachment 10, "Landfill Management," requires the landfill to be operated with the air-supported roof structure. No provisions were provided in the renewal application for when the air-supported roof structure is not in use. DSWM believes that if the air-supported roof structure is ever not in use, it should be only temporary (e.g., until it is repaired). A modification to the permit would be required at or prior to such time with sufficient details for operation of the landfill without a cover.

6. **Comment:** Subparagraph III.B.7(a) should be renumbered as paragraph III.B.7. Paragraph III.B.7 should be renumbered as paragraph III.B.8, and the phrase "When the air-supported roof structure is not in use" should be added. The phrase "If necessary" should be added to subparagraph III.B.7(e) [renumbered as subparagraph III.B.8(d)]. Also, subparagraphs III.B.7(b) through (e) should be renumbered as subparagraphs III.B.8(a) through (d).

Response: The first sentence of subparagraph III.B.7(e) has been changed as follows: "If necessary, water sprayers should be used to prevent wind dispersal of hazardous waste." However, the remaining changes requested above will not be made. See Response to Comment #5.

7. **Comment:** The phrase "24-hour, 25-year" should be added to paragraph III.C.2 as follows: "While the landfill is in operation, it must be inspected weekly and after 24-hour, 25-year storms to detect evidence of any of the following . . . ."

Response: The change has been made.

8. **Comment:** The following sentence should be added to paragraph III.D.2: "Because this a 'monofill' type landfill, a single description of the contents of the landfill will be sufficient."

Response: This change will not be made. Several different waste streams have been disposed in the landfill in the past as stated in Attachment 1, "Hazardous Wastes to be Managed," and Attachment 2, "Waste Analysis Plan." Therefore, DSWM believes that a single description of the contents of the landfill would not be sufficient.

9. **Comment:** Subsection III.G, "Disposal of Small Containers of Hazardous Waste in Overpacked Drums (Lab Packs)," should be replaced as follows: "Small containers of hazardous waste in overpacked drums (lab packs) may not be placed in the landfill."

Response: The change has been made.

10. **Comment:** Subsection III.H, "Special Requirements for Ignitable or Reactive Wastes," should be replaced as follows: "Ignitable and reactive wastes will not be placed in the landfill covered by this permit."

Response: Subsection III.H has been revised as follows: "Ignitable and reactive wastes may not be placed in the landfill."

11. **Comment:** Potassium chloride should be added to the composition of "Brine Mud". Part c) of Item 1 on page 2-2 of Attachment 2, "Waste Analysis Plan," should be changed from "Sodium chloride" to "Sodium or potassium chloride".

Response: The change has been made.

12. **Comment:** Mercury contaminated soils/demolition debris should be added to the composition of "Mercury Contaminated Material" as Part k) of Item 1 on page 2-4 of Attachment 2, "Waste Analysis Plan."

Response: The change has been made.

13. **Comment:** Potassium chloride should be added to the composition of "Wastewater Treatment Sludge from the Mercury Cell Process". Part e) of Item 1 on page 2-7 of Attachment 2, "Waste Analysis Plan," should be changed from "Sodium chloride" to "Sodium or potassium chloride."

Response: The change has been made.

14. **Comment:** The third sentence in the first paragraph on page 6-2 of Attachment 6, "Contingency Plan," should be revised by adding the phrase "or hazardous waste constituent" to reflect that the contingency plan applies to hazardous waste and hazardous waste constituent spills and leaks. This sentence should read as follows: "The plan was designed to minimize hazards to human health and the environment due to fires, explosions, or any unplanned sudden or non-sudden release of a hazardous waste or hazardous waste constituent to the air, soil, or surface water."

Response: The change has been made.

15. **Comment:** The second paragraph on page 6-2 of Attachment 6, "Contingency Plan," should be revised by adding the phrase "on-site or" as follows: "Hazardous wastes that are generated and stored at the facility for on-site or off-site disposal are ignitable, toxic, or corrosive."

Response: The change has been made.

16. **Comment:** Item 1 on page 6-2 of Attachment 6, "Contingency Plan," should be changed from "Sodium Hydroxide and Chlorine" to "Caustic and Chlorine."

Response: The change has been made.

17. **Comment:** The second sentence in the first paragraph under Item 1 on page 6-2 of Attachment 6, "Contingency Plan," should be revised by adding the phrase "or potassium" as follows: "Brine is a sodium or potassium chloride-water solution."

Response: The change has been made.

18. **Comment:** The fourth sentence in the second paragraph under Item 1 on page 6-2 of Attachment 6, "Contingency Plan," should be revised to delete the phrase "containing up to 0.3% sodium" as follows: "The amalgam is removed at the end of the cell."

Response: The change has been made.

19. **Comment:** The caustic concentration stated in the sixth sentence of the second paragraph under Item 1 on page 6-2 of Attachment 6, "Contingency Plan," should be revised from 50% to 45-50%, and the word "soda" should be deleted, as follows: "Here, caustic is produced at a concentration of 45-50% by weight."

Response: The changes have been made.

20. **Comment:** The third sentence of the first paragraph under Item 2 on page 6-2 of Attachment 6, "Contingency Plan," should be revised by replacing "Wurbs" with "Werb's" as follows: "The main feature of the process is the Werb's disc reactor, which is designed to bring liquid SO_2 into continuous contact with NaHg."

Response: The change has been made.

21. **Comment:** The process description for hydrochloric acid on page 6-3 of Attachment 6, "Contingency Plan," should be replaced with process descriptions of sodium bisulfite (Item 3) and sodium hypochlorite (Item 4) as follows:

3. *Sodium Bisulfite*

Sodium bisulfite is a 38-44% solution of sodium bisulfite and water. The solution also contains low concentrations of sodium sulfite and sodium thiosulfate. It is produced at a pH of 3.5 to 5.0.

In the production of sodium bisulfite, 50% sodium hydroxide is reacted with liquid sulfur dioxide in a Werb's reactor at a pH of 3.5 to 5.0. The sulfur dioxide is fed from an existing 90 ton sulfur dioxide storage tank. Sulfur dioxide is added to the Werb's reactor through a pH control valve where it reacts with sodium hydroxide to form sodium bisulfite. Once the solution reaches the desired concentration, it is pumped to a storage tank. The storage tank is nitrogen padded, and there are no emissions from the storage tank. The Werb's reactor will be operated under a slight positive pressure with any offgas passing through a packed scrubber or discharging into a drum of dilute sodium hydroxide.

4. *Sodium Hypochlorite*

Sodium hypochlorite is a 150-170 gpl solution of sodium hypochlorite and water.

The system consists of two 15,000-gallon capacity titanium hypo mix tanks, three 15,000-gallon capacity titanium hypo storage tanks, three titanium plate-and-frame hypo coolers, two titanium hypo scrubbers, two scrubber fans, and several pumps. The mix tanks are filled with 20% caustic solution which is circulated through one of the scrubbers at all times. Chlorine tailgas is fed into the mix tanks through Halar® diplines. Each of these diplines has a siphon break to prevent hypo solution from being pulled back into the plant's chlorine pipelines.

Once the caustic soda solution has been depleted, the hypochlorite solution is transferred to one of the facility's storage tanks. There the hypochlorite solution can be further cooled in one of the plate-and-frame coolers by circulating out of the storage tank, through the cooler, and back into the same tank. The hypochlorite solution is typically cooled to 20-25°C. From storage, the hypo is pumped to a truck loading station where it is shipped by truck trailer to the customer. During times when sodium hypochlorite production exceeds customer demand, the chlorination is continued until all residual alkali has been exhausted. The hypo solution is then treated with Reductone® solution (sulfite) until decomposition. The decomposed hypo is either transferred to the plant's secondary treatment facility for further treatment or sent to the plant's chemical sewer.

Response: The changes have been made.

22. **Comment:** A new paragraph should be added on page 6-3 of Attachment 6, "Contingency Plan," as follows: "The sulfur dioxide and hydrochloric acid processes on site do not contain mercury, so they do not affect the hazardous waste contingency plan for the hazardous waste landfill."

Response: The change has been made.

23. **Comment:** The alternate hazardous waste emergency coordinator information should be updated on page 6-4 of Attachment 6, "Contingency Plan."

Response: The change has been made.

24. **Comment:** The emergency phone numbers for the Charleston Police Department, the Bradley Co. Emergency Mgmt. Agency (LEPC), and the Charleston Volunteer Fire Dept. should be updated on page 6-5 of Attachment 6, "Contingency Plan." In addition, the McMinn Co. Emergency Mgmt. Agency (LEPC) and US Coast Guard emergency phone numbers should be added to the list of emergency contacts.

Response: The changes have been made.

25. **Comment:** The first sentence of item 8 on page 6-6 of Attachment 6, "Contingency Plan," should be revised by adding the phrase "involving a hazardous waste or hazardous waste constituent" as follows: "Within fifteen (15) days after an incident involving a hazardous waste or hazardous waste constituent, the primary hazardous waste emergency coordinator will prepare a written report on the incident to be submitted by Charleston plant management to both the Regional Administrator and the Commissioner of the Tennessee Department of Environment and Conservation."

Response: The change has been made.

26. **Comment:** Part d) of Item 4 on page 6-1-3 of Appendix 6-1, "Contingency Equipment," in Attachment 6, "Contingency Plan," should be revised to include cellular phones as follows:

d) Radios and/or Cellular Phones

i) . . .

ii) Cell phones are often used in lieu of radios or in conjunction with radios

iii) Radios and cellular phones also have capabilities of communicating with local EMS and the Police Department

Response: The changes have been made.

27. **Comment:** Item 1 on page 6-2-2 of Appendix 6-2, "Liner Repair," in Attachment 6, "Contingency Plan," should be revised as follows:

1. Method to Identify Liner Failure

a) A section of one-foot thick sand and gravel layer is provided beneath the upper liner to detect any leakage. This zone consists of a network of five (5) perforated pipes (4" diameter) equally spaced along the length of the landfill. These pipes are tied to a common header contained in the bentonite plug at the base of the unit. The header is connected to the leak detection underdrain system (drains to a sump) outside of the north dike. This underdrain system is monitored routinely (weekly) for signs of leakage.

b) Determine which section of this leachate detection system is leaking. Uncover the section which could contain impounded liquid. Inspect this section of the liner system. If a liner failure is identified, repair this section by following the steps below.

c) If the inspection of the liner system does not indicate any structural failure, continue to investigate to find the liner failure until the section of liner failure is identified.

Response: The changes have been made.

28. **Comment:** The term "approximately" should be added to the fourth sentence in the fourth paragraph on page 10-2 of Attachment 10, "Landfill Management," as follows: "The active area cell of the landfill is approximately 300 feet long by 220 feet wide at the top."

Response: The change has been made.

Comments from DSWM

1. Subpart I.D.11(b)(ii)(II) has been changed, in part, from “Within 15 days of the date of submission of the letter in subpart I.D.11(b)(ii)(I) above . . . ” to “Within 15 days of the date of submission of the letter in part I.D.11(b)(i) above . . . .”

2. Subsection I.J has been revised to add “(A) Item” to the bottom of the permit structure as follows:

I. Section

A. Subsection

1. Paragraph

(a) Subparagraph

(i) Part

(I) Subpart

(A) Item

3. Part b) of Item 2 on page 6-2-2 of Appendix 6-2, “Liner Repair,” in Attachment 6, “Contingency Plan,” has been revised to refer to Attachment 10, “Landfill Management,“ as follows: “Replace the entire excavated area of the liner system duplicating the original installation as provided in Attachment 10, ‘Landfill Management’.“